

SECTION 7

TECHNOLOGIES FOR TEACHER PROFESSIONAL DEVELOPMENT—VIDEO RECORDING AND PLAYBACK

GUIDING QUESTIONS

- What professional-development goals will video help us address?
- What existing or planned programs for education improvement could benefit from video-supported TPD?
- What organizational structures, such as school clusters or district offices, can assist with sharing and use of video equipment?
- To what extent does limited infrastructure, especially electrical power, pose a challenge? How might this challenge be overcome?
- If real gains in terms of teaching can be achieved through the introduction of video, what is the estimated addition to the cost per teacher trained?

IN THIS SECTION

- Video Recording and Playback for TPD
- Video for Observation and Self-Assessment
- Video Support for Teacher Change in Congo
- New Video Tools
- Strategic Considerations
- Web Resource

SUMMARY

This section addresses the use of video recording and playback tools to support TPD, specifically in helping teachers improve their instructional techniques. Video tools have been used effectively in many schools to support *on-site* TPD efforts and follow-up to *standardized* TPD.

Teachers who are asked to try new instructional techniques benefit when they see other teachers using those same techniques. They also benefit from opportunities to review and assess their own classroom practices. Video recording and playback tools enable both of these activities. For these reasons, video recording and playback offer powerful support for on-site TPD methods.

The cost of digital video tools has fallen dramatically and continues to fall, while their robustness and versatility has increased, making them suitable for use in low-infrastructure environments. Video tools can be shared among classrooms or schools. Ministries and schools can create their own libraries of best-practice classroom videos for circulation and sharing.

Key considerations for success in the deployment of video tools for recording and playback center on integrating their use into existing programs of site-based TPD or follow up, and in identifying new opportunities to support teaching and learning to increase the value and cost-effectiveness of these tools.

Video recording and playback tools are best used to improve teachers' *intermediate* or *advanced* skills.

VIDEO RECORDING AND PLAYBACK FOR TPD¹⁰

Teachers benefit when they see other teachers work in new ways. When they see a teacher helping six or seven small groups of students, or using questions that prompt intense reflection and statements of opinion rather than half-hearted right answers, they understand such practices better. The risk in experimenting—the risk of the unknown—is reduced.

Whether it is used to support students or teachers, recorded video offers advantages that include reuse and schools' control of the schedule. In addition, teachers (or students) can control the rate of presentation (freeze-frame, play, rewind, etc.), enabling viewing to be interspersed with discussion or specific sequences to be repeated.

Video for Observation and Self Assessment

Video segments of classroom activities are commonly used to enable teachers to watch expert teachers and also observe their own experiments with new instructional methods.

Video of classroom practices can be acquired from many universities and private-sector companies, often via Internet download. Such videos are designed to achieve specific objectives in specific contexts, however, and may not be appropriate for use in developing-country school systems.

Giving teachers the opportunity to assess their own classroom practices is another effective use of video. The Basic Education Support 2 program in Namibia tasked circuit inspectors with videotaping teachers' classrooms to enable observation, assessment, and sharing of case studies.

In sub-Saharan Africa and other regions, video has been used effectively to aid teachers grappling with new teaching modes. In 1996, schools in Lesotho demonstrated techniques for including disabled students in regular classes in a video series produced by Save the Children. The series of 13 tapes, each

SHARING CLASSROOM PRACTICE

Two-way radio, video, and other communication technologies can bring isolated teachers into conversations with a larger community, which can be important if there is a strong guiding structure that ensures that discussion is productive and focused.... And there are lots of ways that visual and text-based technologies can help capture and disseminate complex-but-concrete images of teacher practice or student learning processes, which can then become the basis of discussion and analysis.... But the technology does not do much to ensure that trainers with real expertise are leading the resulting discussions.

Katherine McMillan Culp, PhD
Senior Project Director
Center for Children and Technology
Education Development Center

New York City, USA

STRATÉGIES INTÉGRÉES POUR UNE EDUCATION EQUITABLE ET DE QUALITÉ: VIDEO SUPPORT FOR TEACHER CHANGE IN CONGO

The *Stratégies Intégrées pour une Education Equitable et de Qualité*¹¹ (SIEEQ) project in the Democratic Republic of Congo uses video to support teacher development in workshops and to provide follow-up support for teachers once they have returned to their schools.

Video is the lynchpin technology for improving teachers' classroom practices. Initial work with Congolese teachers in their own classrooms is videotaped and edited by project personnel to create a DVD for use in professional development workshops. The 720 teachers targeted by the project observe specific pedagogies by their peers and colleagues, and compare those pedagogical techniques with their own practices.

SIEEQ also uses video as part of a program of intensive follow-up support for teachers. When an SIEEQ team travels to a project school, they bring a digital video camcorder and a laptop—often charging the batteries using a car-based inverter. They film teachers working with students, upload the video to the laptop, and share the video with the teachers, using it as a basis for encouragement and constructive suggestions.

¹⁰ Audio recording and playback tools can also be used effectively in the classroom. Primary uses include playback of IRI lessons, whether these are recorded by ministries of education to provide access to schools outside of radio broadcast "footprints" or by schools themselves to enable re-use. In addition, educational organizations, such as the National Education Computing Conference (NECC), make available for purchase audio recordings of sessions from their conferences. ¹¹ The SIEEQ project has the following implementing partners: Education Development Center (EDC); The Academy for Educational Development (AED); Intercultural Center for Research in Education; International Foundation for Education and Self-Help; The Mitchell Group. Information about the project was provided via telephone interview, August 15, 2005, with Stephanie Foerster, Communications Manager, International Education Systems Division and Kanjit Hailu, Program Assistant, of the International Education Systems Division at EDC.

about 15 minutes long, guides teachers through identifying physical and cognitive disabilities, helping children overcome them, and ensuring that the classroom remains a safe, equitable, and welcoming environment.

New Video Tools

Consumer-level video playback and recording hardware, as well as video camcorders, have been available for several decades. Cost considerations, as a result, vary widely according to project requirements and local availability.

Innovation in the arena of digital video may significantly increase the usefulness of video for professional development in developing countries. Digital recordings of video can be compressed, transmitted over the Internet, via digital radio, or via telephone, and can be edited in computer workstations.

■ Digital video

The ability to record video in digital files enables recording, editing, and storage on computers and other devices, as well as transmission via the Internet and other networks.

■ Video compression (MPEG 4, etc.)

Video compression reduces the amount of data required to render images and motion, facilitating storage on DVDs or hard drives and transmission via the Internet.

■ DVD

DVD technologies enable several hours of video to be stored in a durable medium that can be played on computers with DVD drives or on standalone DVD players. Some computers also “burn” or write DVDs.

■ Portable media devices

Powered by rechargeable batteries, portable DVD players (including those found on laptop computers) and others types of portable media devices (including video iPods) can provide video to schools with limited or no electrical power.

■ Digital video camcorders, digital camers, webcams and mobile phone cameras

Digital camcorders (below US\$500 at present) enable video to be uploaded to computers for editing or transmission via the Internet. (Lower-priced ‘webcams’ produce video of lower quality.) Many still-photo digital cameras and some mobile phones now also shoot video—although quality is inferior.

■ Multimedia Messaging System (MMS)

Evolved from SMS (or Short Messaging System), MMS enables mobile telephone users to share audio, video, and photos.

Strategic Considerations

Video recording and playback tools have not been used extensively to support TPD in developing countries. However, as a tool to strengthen site-based TPD, video has the potential to be effective. Strategic considerations revolve around several factors:

■ Support for site-based TPD

Video recording and playback tools are best seen as complements to site-based TPD or as follow-up to standardized TPD. Site-based TPD can provide the structured opportunities that teachers need in order to benefit from observing master teachers or their own efforts.

■ Managing access

Schools can share video production and playback tools. Such sharing can reinforce peer support and collaboration. Management and accountability mechanisms must be developed to minimize theft, misuse, and breakage.

■ Leveraging assets

DVD players can be used to show educational programming to students and can also be used for TPD. Video camcorders earmarked for TPD can be loaned out to special student projects, such as creating video records of community elders.

In all of the above considerations, the key is to identify the *existing programs* that can benefit from video support, as well as other *near-term opportunities* for the use of these tools, and to then determine how use of these tools can be allocated and managed most effectively.

Consider Using Video Recording and Playback to Support TPD When...

Minimum capacity and infrastructure requirements can be met, including:

- Stable electricity is supplied to 70 percent of the schools targeted
- All hardware can be serviced within the country

Existing TPD efforts include:

- Site-based programs such as Mentoring, Lesson Study, or Open Lessons
- Standardized programs that include, or will include, site-based follow up

Dissemination and delivery, if planned, can include:

- Delivery of video cassettes or DVDs by postal or other means
- Network access to digital video via the Internet, digital radio, or MMS

Appropriate content is available, such as:

- Locally produced video
- Foreign-produced video that shows teachers and classroom environments with which your teachers can identify

Professional development addresses objectives such as:

- Enhancing or changing the ways teachers manage classroom activities, such as small group work or whole-class discussion
- Providing teachers and students with powerful visual resources for learning

WEB RESOURCE

- *Active Learning with Technology Video Series*

Developed by Southwest Educational Development Laboratory, this series of ten videos provides examples of effective uses of technology in classroom instruction. The first two episodes in this series provide an overview of the role of technology in supporting student-centered learning. The other eight classroom episodes depict students and educators engaged with technology as part of innovative project-based activities. The technologies and instructional strategies employed are highly adaptable to other content areas and grades.

<http://www.sedl.org/pubs/catalog/items/tec50.html>

VIDEO RECORDING IN TPD AT A GLANCE

Roles in TPD & education

- Demonstrates new modes of teaching and learning through views of real classroom activities (Lesotho video package)
 - Video recording of classes shows teachers their own interactions, habits, and progress toward effective teaching
- Teachers benefit from seeing other teachers in action

Strengths

- Teachers benefit from seeing themselves in action
- Video recordings can be used and re-used according to teachers' schedules
- Playback controls (rewind, freeze-frame, etc.) enable close analysis of specific events
- Video production tools can be used locally—in schools, by ministries, etc.
- Broadcast quality video is powerful (moving images, audio, etc.) and familiar
- Effective learning resource for teachers and students—can “bring” viewers to events and phenomena to support concept building, retention, etc

Limitations

- Value of content may degrade over time—costs of revisions and new programming are high; visual images “show their age”
- Video produced by foreign institutions may be ineffective—teachers may not identify with experiences shown outside recognizable contexts
- Poor roads, lack of rural electrical power and other challenges to distribution in IDCs may reinforce differences in education access

Cost profile

- Variable production costs—professional quality is high; cost of local (in-school) production can be low
- Initial cost of hardware per school is moderate
- Hardware costs are falling—including for digital video cameras, storage media (DVDs, hard drives), and players
- Distribution of video content to schools may entail low or moderate cost
- Potential reuse lowers recurrent costs of large-scale programs
- Low-cost, professional-quality resources may be available from universities or foundations

Other considerations

- Advances in digital video may increase the value of video for TPD in IDCs—digital video cameras, portable DVD players
- New, powerful mobile phones can shoot low-resolution video clips
- Compression software (e.g., MPEG4, etc.) makes short videos available via CD-ROM and the Internet
- Easy-to-use editing tools enable moderate-quality video production by ministries, universities, and schools